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Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 171

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WORLDWIDE AFFAIRS

BRIEFS

USSR AIDS IRAQI TELECOMMUNICATIONS--Baghdad, 2 Jul (INA)--An Id. one million (U.S. dollars, 3.4 million approx.) telecommunication station will be built here according to a contract signed here today with a Soviet company. The station, due to be completed before convening the nonaligned summit conference scheduled on September 1982, will provide telephone contacts with the socialist and developing countries. It will also provide the exchange of the TV and broadcasting programmes with the socialist and Arab countries. The contract was signed by chairman of Iraqi State Establishment for Post, Telegraph and Telephone and representative of the Soviet Promashexport Company. [Text] [JN021702 Baghdad INA in English 1650 GMT 2 Jul 81]

HUNGARY TV AGREEMENT WITH ALGERIA--Budapest, 3 Jul (MTI)--A 3-year cooperation agreement providing for jointly prepared programs as well as newscast and program exchanges, was signed by Nagy Richard, president of the Hungarian television, and Abderrahman Laghouati, director-general of the Algerian radio and television, in Budapest Friday. [Text] [LD070210 Budapest MTI in English 1722 GMT 3 Jul 81]

USSR, IRAQ TECHNOLOGY TRANSFER--Baghdad, 3 Jul (TASS)--The Soviet foreign trade association "Prommashexport" and the state post, telegraph and telephone organisation of the Ministry of Transport and Communications of Iraq have signed a contract for the delivery of Soviet technology for an Iraqi land-based space communications station. This will make it possible for the station to join the international system "Intersputnik." Iraq will be able to establish reliable telephone, telegraph, facsimile and telecode communications with countries covered by the "Intersputnik" system as well as exchange TV and radio programs with them. [Text] [LD031512 Moscow TASS in English 1352 GMT 3 Jul 81]

JAPANESE AID TO NEPAL--Japan has agreed to provide grant assistance of about 10.60 crore rupees for the improvement and development of mediumwave radio broadcasting network in Nepal. Letters to this effect were exchanged in Katmandu today between his majesty's government of Nepal and the government of Japan. According to the press release issued by the Finance Ministry, under the assistance two mediumwave transmitting stations of 100 kilowatt capacity each--one in Katmandu and the other in Pokhra--and one studio center in Katmandu will be established. His majesty's government of Nepal is to provide about 10 million rupees for the project which will be utilized for the procurement of land and the supply of water and power facility. The project is expected to be completed within the 15 months from the inspection of project work. Upon the completion of the project about 55 percent of the population of Nepal will have access to the mediumwave broadcasting. The letters were signed by Jitendra Lal Maskey, acting secretary of the Ministry of Finance and Minao Tsuchiya, ambassador of Japan on behalf of his majesty's government of Nepal and the government of Japan respectively. His majesty's government of Nepal has in the press release expressed sincere appreciation to the government of Japan for the assistance provided under the agreement and their continued interest in the economic and social development of Nepal. [Text] [BK060301 Katmandu External Service in English 1450 GMT 5 Jul 81]

CSO: 5500/2242

PAPER DETAILS APPLE DOMESTIC SATELLITE PROJECT

Madras THE HINDU in English 18 Jun 81 p 8

[Article by N. N. Sachitanand: "APPLE: Its Exciting Applications"]

> [Text] The first Indian-made experimental communication satellite, the Ariane Passenger Pay Load Experiment (APPLE) will be fired into orbit on Friday from Kourou, a launching station in French Guyana.

THE APPLE spacecraft project represents another major step in the journey towards acquiring indigenous capability in domestic satellite communications technology which began with SITE (Satellite Instructional Television Programme) conducted between 1975 and 1976, followed by STEP (Satellite Telecommunications Experiments Project) conducted between 1977 and 1979.

While SITE and STEP gave us experience in planning, designing and making the ground based segment of satellite communications technology, the APPLE project is intended to primarily develop indigenous capability in design, development, fabrication, test and evaluation, injection into geostationary orbit, in-orbit management and utilisation of geostationary communications satellites.

If the APPLE mission succeeds it will be a major triumph for Indian space technology since only the U.S., USSR, France and Canada have as yet demonstrated capability in building and orbiting three-axis stabilised geostationary communications satellites. (Geostationary satellites orbit at about 36,000 km above the earth at a speed equal to the earth's spin so that they appear stationary with respect to any point on earth).

Communications experiments

APPLE will have a single communications transponder on board operating on the 6 and 4 GHz bands and having a radiated power of 31.5 dBW (peak). This transponder together with the 0.9 metre dia paraboloidal antenna with prime focus feed will provide APPLE with roughly the same type of communications capability as the Franco-German Symphonie satellite used in STEP.

Thus APPLE can be used for a large number of communications experiments involving point-to-point communication, data transfer, TV relay and radio networking. However, its radiated power is not enough to enable direct broadcast of TV signals to small, low-cost terminals as was done during SITE using the ATS-6 satellite of the U.S.

A secondary objective of the APPLE programme is to conduct various technical experiments in communications in which the Indian Space Research Organisation and the Telecommunications Research Centre of the P & T will be collaborating. These include:

(1) Time Division Multiple Access (TDMA), a sophisticated technique of digital communications which enables a large number of messages, such as telephone conversations, to be transmitted using a single frequency. This technique permits maximum use of an allotted frequency band. Transmission rates of 30 and 60 megabits per second will be tried.

Signal transmissions

(2) Spread Spectrum Multiple Access (SSMA), a technique for transmitting signals over a wide band width which is employed to get better signal to noise ratio and for transmitting secret messages.

(3) Random Access Packet Switching (RAPS) is a technique by which data from different sources, is converted into digitised "packets" and routed to different destinations via the satellite. Thus, APPLE will

help inter-connect ISRO computers at Ahmedabad, Sriharikota and Bangalore.

(4) Communications via the satellite between remotely located mule-mounted Small Communication Terminals (SCOTs) and a major station. The SCOT will use a 1.5 metre dia. antenna.

(5) Remote area communications via the APPLE using truck-mounted and jeep-mounted (these can be airlifted) terminals.

(6) Television With Multiple Audio (TWMA), in which a TV transmission is beamed to the ground via the satellite accompanied by six simultaneous voice channels. This is a very useful technique for a multilingual country like India. It can be used, for example, for a TV broadcast of the Republic Day parade along with the commentary in six different languages.

Data for users

The above experiments are technical in nature and will provide experience and data to ISRO, P & T, the Indian Meteorological Department, All India Radio, Doordarshan and other direct user agencies to prepare for the operational domestic satellite communications system which will go on stream next year with the launching of the Indian National Satellite (INSAT).

However, the techniques outlined above can also form a base for a number of interesting application experiments involving Indian users. ISRO had suggested a number of such experiments which have been outlined in an article in the April, 1981 issue of *Vidura* the journal of the Press Institute of India, by Kiran S. Karnik and B. S. Bhatia of the Space Applications Centre, Ahmedabad.

Some of the experiments cited are:

Interactive education: A video lecture can be transmitted from one of the large earth stations (Ahmedabad, Delhi or Madras) and relayed via APPLE to audiences served by the other two large stations and truck-mounted earth stations. The audience can verbally communicate with the lecturer via satellite to clear doubts and get additional information from him.

Telecast of operations

For example, a complicated operation can be telecast to various parts of the country and the surgeon could later answer questions from viewers in various locations. Some of the Indian Institutes of Technology are planning to use this method for a two-week course on satellite communication via APPLE.

If the lecture is limited to still pictures rather than moving pictures (as in regular TV broadcasts), it is possible to include simpler and smaller receiving stations (with 3 m. dia. antennas) in the broadcast network.

(2) Teleprinter network: APPLE could provide a teleprinter link with remote areas using the transportable terminals. Even SCOT, with its 1.5 m. antenna, can receive and send teleprinter messages to the large earth stations via APPLE. Thus, two small stations can be linked to each other through a main earth station. One news agency has shown interest in this experiment for trying out teleprinter links with the North-East region.

(3) Data exchange transfer: The possibility of using APPLE for exchange of important information between branches of a bank and for instant availability of exchange rates has been discussed. Access to large computerised data banks via APPLE has exciting possibilities.

Academics in universities could find this access very useful. The railways could build up a wagon-tracking system using key traffic monitoring points and a central data computer. ISRO is planning a computer interconnection between its centres at various locations.

(4) Participative Democracy: There is the possibility of setting up a two-way live TV link between one of the large earth stations (say Delhi) and any place in the country (by deploying a truck-mounted terminal there) via APPLE. This link can then be used in dialogues between a minister in Delhi and a group of villagers in that location or two villages in different parts of the country can be brought "face to face" for sharing experiences and promoting national integration.

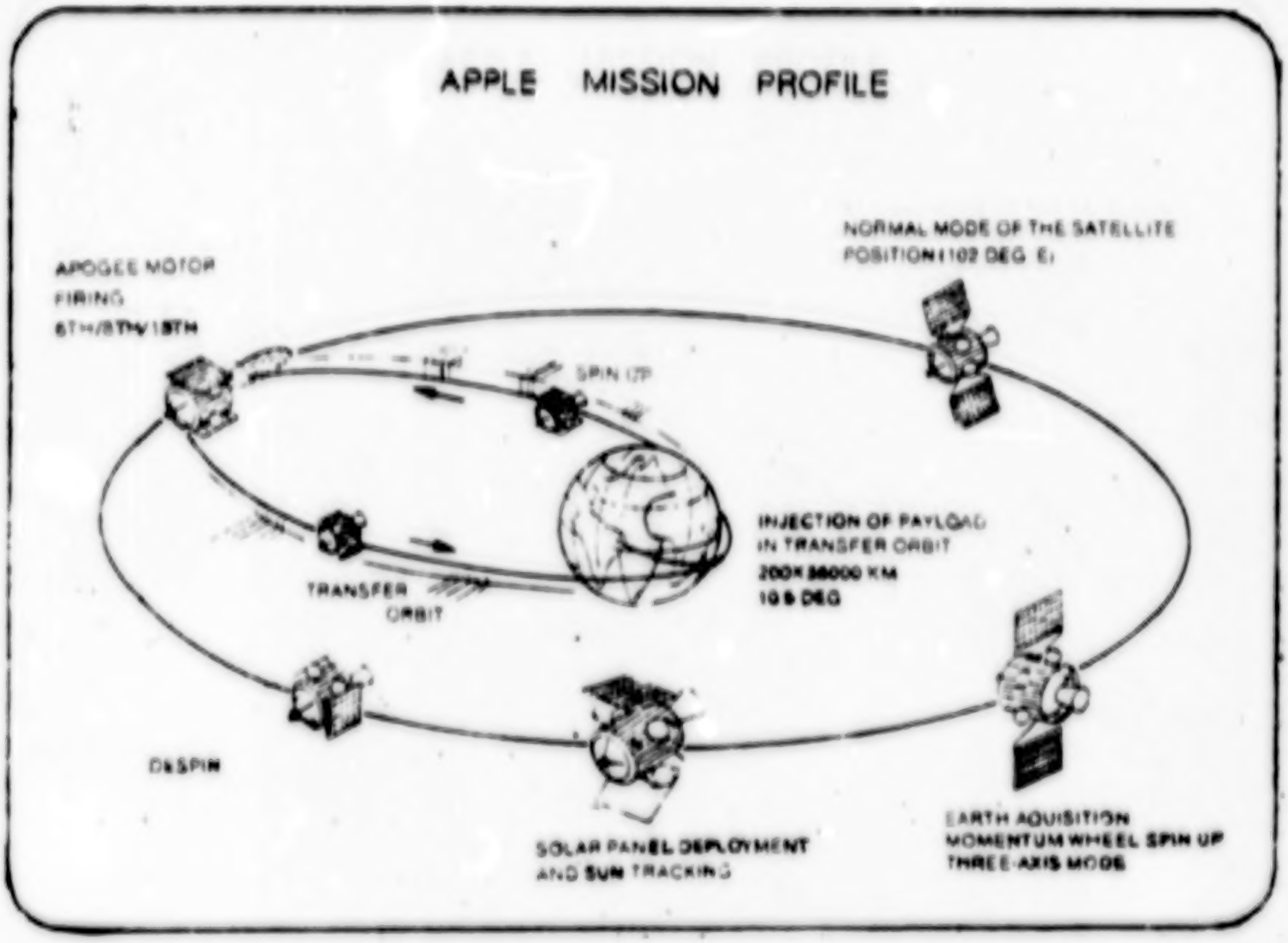
Ground network

Unfortunately, despite ISRO's strenuous effort to get potential users in the country interested in these exciting applications of APPLE, very few have responded with enthusiasm. The general attitude is to "wait and see". At present the preparations by such potential users are very much in the preliminary stages. Perhaps, as expressed at a press conference recently by the ISRO chief, Prof. Satish Dhawan, once the APPLE is aloft and functioning, the interest (and investment) in its applications aspect might accelerate.

Of course, for many potential commercial applications, the ground network is still to be established. However, an extensive ground network is rapidly coming up for INSAT and the experiments with APPLE will provide valuable guidelines to determine whether any particular application is worth being made operational for INSAT.

APPLE is scheduled to be launched on Friday between noon and 3 p.m. GMT (5-30 p.m. and 8-30 p.m. IST).

'APPLE' is a co-passenger along with METEOSAT-2 (a European weather satellite) and CAT, a technological capsule for monitoring the launcher performance.


APPLE MISSION PROFILE

APOGEE MOTOR FIRING 6TH/8TH/10TH
NORMAL MODE OF THE SATELLITE POSITION (102 DEG. E)
SPIN UP
INJECTION OF PAYLOAD IN TRANSFER ORBIT 200X36000 KM 10.5 DEG
TRANSFER ORBIT
DESPIN
SOLAR PANEL DEPLOYMENT AND SUN TRACKING
EARTH AQUISITION MOMENTUM WHEEL SPIN UP THREE-AXIS MODE

The triple payload will fly on-board the third-developmental flight (LO-3) of the European Space Agency's (ESA) 3-stage launch vehicle, Ariane. Launch will take place from the ESA launch base at Kourou, French Guyana in South America.

Continuous tracking

The Ariane launch vehicle will inject the LO-3 composite payload into a nominal synchronous transfer orbit of 200 x 35,786 km. at 20°W over the equator with an inclination of 10.5° to the equator. Subsequently, the METEOSAT separates, followed by the separation of APPLE from CAT.

Immediately after injection, APPLE will be tracked by a world-wide TTC network comprising ESA stations at Kourou (French Guyana), Carnarvon (Australia), ISRO stations at Sriharikota (SHAR) and Ahmedabad and ISRO transportable station at Suva in Fiji. This network will provide almost continuous tracking and data acquisition from the satellite before it becomes geostationary.

The entire network and satellite operations will be controlled from the APPLE Mission Control Centre (AMCC) at SHAR Centre, Sriharikota.

ISRO teams are stationed at Darmstadt (W. Germany) for coordinating operations through ESA stations and also at the other ISRO stations at Ahmedabad and Fiji.

The planned operations sequence after injection into the 'transfer' orbit will be as follows.

Systems check-out

After launch a detailed check-out of the onboard systems via telemetry, will be carried out. After determination of the precise orbit and attitude (orientation of the satellite), the satellite attitude will be corrected and at the selected time (nominally approx. TO + 58 hours, TO being the launch time), the Apogee Boost Rocket Motor will be fired by Command from the Control Centre at SHAR to take APPLE from the transfer orbit to an almost circular 'near-synchronous orbit' (NSO).

The hitherto spinning satellite will then be despun, its twin stowed solar panels deployed and made to track the Sun (nominally within TO + 3 days) and the satellite made to undergo a sequence of manoeuvres which ultimately make it point towards Earth.

Subsequently, small orbit and attitude corrections will be carried out using the onboard Hydrazine Reaction Control System (RCS) which has 16 thrusters (Small rockets capable of generating 0.1 kg. thrust by catalytic decomposition of Hydrazine fuel) in various orientations. This will eventually make the satellite reach its final target destination at 102°E above the Equator with a nearly 24 hours orbital period so that it becomes geostationary.

Orbital corrections

Thereafter, the C-band communication antenna will continuously point towards the beam centre near Nagpur, India. Periodic orbital corrections as necessary will be made throughout the life of the satellite using the hydrazine fuel to maintain the satellite within + 0.1 deg of this location. Hydrazine fuel onboard should be sufficient to provide a useful life of atleast one year under normal conditions.

The entire sequence of operations culminating in the satellite becoming geostationary is likely to take anything from three to 20 days after the Apogee motor is fired depending on the optimisation strategy necessary.

Once the satellite is successfully positioned in the correct orbit location in about two weeks after launch, a through on-orbit check-out of all onboard systems, including the C-band communications transponder, will commence. On successful completion of this check-out, the satellite will be declared operational.

CSO: 5500

INSAT MULTIPLEX UNIT TO BE PRODUCED INDIGENOUSLY

Madras THE HINDU in English 6 Jun 81 p 7

[Text] New Delhi, June 5--The Naini unit of the Indian Telephone Industries (ITI) will provide the entire multiplex unit for the chain of 28 earth stations which will be connected to INSAT, India's first domestic communication satellite, scheduled to go into orbit in February next year.

Multiplexing equipment is required for microwave and satellite transmission of telephone communication. The equipment "stacks" the telephone messages received in the exchanges in the first stage for transmission to the satellite in their respective frequency domains, ranging generally from 300 kHz (kiloHertz) to 4000 kHz.

The frequencies are then "modulated" for transmission to the satellite. When the satellite beams back the messages in the modulated frequencies to the receiving earth stations the multiplexing equipment "de-multiplexes" the frequencies for further on-hand transmission to the exchanges.

The Naini unit will provide 1,500 12-channel group ends during the year. Of these 1,000 groups will be used for the INSAT project. This will fetch a sales turnover of approximately Rs 5 crores and will enable the P and T to provide 6,000 high grade trunk circuits through the satellite media.

The Naini unit is the only one in the country which is supplying frequency division multiplexing equipment for long distance applications. The P and T Department employs diverse media like open wire trunk lines and coaxial, microwave and satellite systems for providing trunk services in the country.

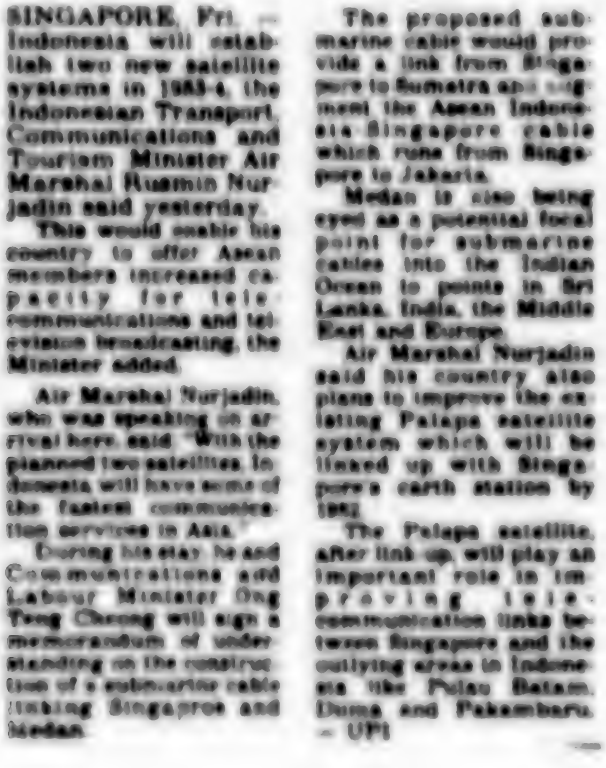
In 1980-81, the unit supplied to P and T a little over a thousand 12-channel groups of these equipment which will enable P and T to add 6,000 high-quality, long-distance telephone circuits to the national long-distance trunk network.

CSO: 5500

TWO NEW SATELLITE SYSTEMS PLANNED

Kuala Lumpur NEW STRAITS TIMES in English 23 May 81 p 11

[Text]



SINGAPORE, Fri. — Indonesia will establish two new satellite systems in 1983-4, the Indonesian Transport, Communications and Tourism Minister Air Marshal Rusmin Nurjadin said yesterday.

This would enable his country to offer Asean members increased capacity for telecommunications and television broadcasting, the Minister added.

Air Marshal Nurjadin, who was speaking on arrival here, said: "With the planned two satellites, Indonesia will have some of the fastest communication services in Asia."

During his stay he and Communications and Labour Minister Ong Teng Cheong will sign a memorandum of understanding on the construction of a submarine cable linking Singapros and Medan.

The proposed submarine cable would provide a link from Singapore to Sumatra and augment the Asean Indonesia-Singapore cable which runs from Singapore to Jakarta.

Medan is also being eyed as a potential focal point for submarine cables into the Indian Ocean to points in Sri Lanka, India, the Middle East and Europe.

Air Marshal Nurjadin said his country also plans to improve the existing Palapa satellite system which will be linked up with Singapore's earth station by 1982.

The Palapa satellite, after link-up, will play an important role in improving telecommunication links between Singapore and the outlying areas in Indonesia like Pulau Batam, Duma and Pakambaru. — UPI

CSO: 5500/8502

EARTH SATELLITE STATION TO BE MODERNIZED

Kuala Lumpur BUSINESS TIMES in English 27 May 81 p 20

[Text]

JABATAN Telecoms has contracted with Ford Aerospace and Communications Corporation to install advanced equipment to the tune of $1.2 million in an effort to update its 10-year-old earth satellite station in Kuantan.

This contract awarded recently requires Ford Aerospace, a subsidiary of the US Ford Motor Company, to supply single-channel carrier equipment in the Kuantan earth station.

It is learnt that local telecommunications technical staff will install the equipment themselves.

With this equipment, the Telecoms will be able to call directly their Indonesian counterparts in Jakarta. Presently, access to the Indonesian telecommunication authority, Perumtel, is via public networks linked to the Intelsat-owned Indian Ocean satellite.

Malaysia joined Intelsat (International Satellite Systems) in 1969 on the contribution of $1.8million, or 0.22 per cent of the $800 million capital of the satellite consortium.

In 1976, it became the first Asean country to use a domestic satellite system for television and communication transmissions between the peninsular, Sabah and Sarawak. Transmissions were anchored to the earth stations at Beserah, near Kuantan, and Kota Kinabalu.

Malaysian Telecoms officials told Business Times yesterday that the equipment being bought under the contract with Ford Aerospace included the stringing of "engineering order wire."

The total effect of installing the accessory earth satellite equipment built by Ford Aerospace is to create a totally independent private telecommunications link between the two telecommunication authorities in Jakarta and Kuantan.

This is now not yet possible because the Beserah earth station was built primarily to interface with the Intelsat satellite over the Indian Ocean.

Direct communications with the Palapa satellite control at Jakarta has become essential since Malaysia started using it. The Indonesian-owned satellite is in geostationary orbit over the South China Sea.

In July last year, Malaysia's telecommunications authority officially switched over its television and domestic communications transmissions between Peninsular Malaysia and Sabah and Sarawak from the Indian Ocean satellite to the Palapa.

It is understood that the contract with Intelsat expired last year and the restrictions using other satellite systems had elapsed. When the contract expired, Intelsat agreed to the Malaysian use of the Palapa satellite regionally.

Malaysia still uses the Intelsat system for international communications.

Direct communications between Kuantan and Jakarta earth station are needed particularly to deal with transmission breakdowns.

When this happens, Telecoms engineers and technicians running the earth stations in Kuantan and Kota Kinabalu have to work with their Indonesian counterparts to remedy the faults.

According to the agreement between Malaysia and Indonesia reached in March last year, Malaysia will initially lease one of the Palapa transponders for a period of five years at a cost of $871,000 a year.

With the Palapa link, the Malaysian earth stations will have the capability to transmit and receive telephone calls between Kuala Lumpur and Jakarta, Kuala Lumpur and Alor Star, and Alor Star and Jakarta.

CSO: 5500/8503

CABLE, SATELLITE SYSTEMS PROVIDE GLOBAL LINKS

Kuala Lumpur BUSINESS TIMES in English 16 May 81 p 22

[Text]

MALAYSIA established its first international cable system with the rest of the world in 1962 when the South East Asia Commonwealth (Seacom) submarine cable was installed.

The system linked Malaysia with Singapore, Hong Kong, Guam and Australia and from 1967 onwards — when it was extended to other Commonwealth countries — Malaysia had its telephone, telex and telegraph links with other parts of the world.

The Indian Ocean Commonwealth (Iocom) submarine cable system linking Penang and Madras on the Indian subcontinent was the extension of the Seacom system. Expected to be completed this year, the $106 million project's cost is being borne by Malaysia, Sri Lanka, India and the United Kingdom.

This link would enable 480 calls to be made to the Indian subcontinent, compared to only 60 via the Intelsat satellite.

With the completion of the Penang-Madras link, the system would be extended later to the Middle Eastern countries and Africa.

Penang was also the Malaysian point for another submarine cable system linking the country with Medan in Indonesia. Started in 1979, the 170 nautical mile line would carry 480 telephone lines and is expected to be completed by the end of the Fourth Malaysia Plan period.

Mooted in 1975, the first phase of the Asean submarine cable network linking Singapore and the Philippines was completed in mid-1978.

The Singapore-Indonesia link which was the second phase of the project was completed in 1980 and the third phase involving Thailand, Malaysia and Singapore is expected to be completed by the end of the Fourth Malaysia Plan period.

Owing to Malaysia's delay in joining in the third phase, Thailand initialled an agreement with Singapore for the phase last year.

It was in January this year that Malaysia decided to join in the third segment of the Asean project which will have 1,380 telephone lines in all, from Katong in Singapore to Cherating in Malaysia and on to Petchaburi in Thailand.

In addition to the Seacom, Iocom and Asean cable network, Malaysia would be able to benefit from the Palapa satellite system that was established with Indonesia in 1976.

With the Philippines and Thailand already adapting the system, an Asean-wide satellite communications network would be possible.

Malaysia began its satellite links in 1970 when its first earth station was completed in Kuantan. Together with the second station in Malacca, which was set up a decade later, Malaysia has access to both the Pacific as well as the Indian Ocean satellites.

The two earth stations provide more facilities and extension of the communication with the rest of the world compared to the Seacom cable linking the Commonwealth countries and the Pacific cables linking Japan and the United States.

Malaysia's global telephone link was improved in 1975 when the international subscribers dialling (ISD) system was inaugurated.

Covering Australia, Hong Kong, the United Kingdom and Japan in its initial phase, the system was later extended to West Germany, Switzerland and the United States.

A new international gateway telephone exchange would be introduced soon to complement the submarine cable and satellite systems and improve Malaysia's links with the rest of the world.

As part of the telephone, telex and telegraph networks with other countries, Malaysia would be participating in the Asian news network exchange due to be established by the end of this year by 20 Asian news agencies, including Bernama.

The huge allocation of $4.6 billion made to the Telecommunications Department under the Fourth Malaysia Plan period should enable it to improve not only its domestic telecommunications services but also its global links.

CSO: 5500/8503

CONTRACT AWARDED FOR ELECTRONIC SWITCHING EQUIPMENT

Kuala Lumpur BUSINESS TIMES in English 16 May 81 p 22

[Text]

LAST month, Pernas-NEC Telecommunications Sdn. Berhad, a 60:40 joint venture between Pernas Engineering and Nippon Electric Company, signed what is believed to be the largest telecommunication contract in the history of Malaysia. It carries a price tag of about $1 billion.

The contract marks the transformation of the $11 million a year company into one of the largest manufacturers, assemblers and suppliers of ultra-modern telephone switching equipment in the region. In the next 10 years, it will import or manufacture switching equipment capable of providing the country with an additional 1.1 million working telephone lines.

Pernas-NEC was formed in 1973 and commenced manufacturing in the following year at a plant situated in the Ulu Klang industrial estate. It produces multiplex or transmission equipment, mainly for the Telecommunications Department. Its output and installation averages 10,000 transmission channels a year.

The company's managing director, Dr Syed Hussein, attributed Pernas-NEC's success in securing the huge contract to three major factors — namely the availability of the right kind of competitively-priced product, the backing of an ongoing manufacturing facility and a good track record.

He said that although the Malaysian company may not be completely competent technologically, it has proved that it is moving in the right direction (in acquiring the skill) and has succeeded in maximising the application of local expertise, in particular of the Bumiputras.

Pernas-NEC, which has made commendable progress in increasing the local content in the manufacture of multiplex equipment, hopes to do the same in the manufacture of the exchanges.

However, as it is required to make immediate delivery of the Stored Programme Control (SPC) switching equipment, the first few will be imported in a ready form from Japan.

Domestic production of these exchanges will begin at Ulu Klang next year. By 1986 a second plant will be set up in Kedah to manufacture the equipment. A plant of that nature is estimated to cost between $10 million to $20 million.

To enchance the ongoing process of technical cooperation between the Malaysian company and NEC of Japan, an agreement on the subject has been revised. The Japanese partner undertakes to supply the know-how and license the Malaysian company for the manufacture of NEC NEAX 61 SPC electronic switching system.

Dr Syed Hussein described the contract as a three-way cooperation involving Pernas-NEC, the Telecommunications Department and NEC of Japan. Apart from training in Malaysia, technical staff of Pernas-NEC and the department will have an opportunity of undergoing training in Japan.

When Pernas-NEC commences the production of the SPC switching equipment next year, it will in fact be pioneering the manufacture of the equipment in Asia. Apart from the home plant, the only other NEC plant producing the equipment is in the United States.

As for the manufacture of multiplex equipment — its original product — Pernas-NEC has no intention of abandoning it although it now has better thing to look forward to.

In fact, according to Dr Syed Hussein, the company is geared to increase the output of multiplex equipment in anticipation of higher demand under the FMP.

Furthermore, said Dr Syed Hussein, transmission is part and parcel of the telephone system. Pernas-NEC also possesses the know-how to assemble and repair teleprinters.

It had also participated in a number of engineering projects such as the installation of FDM (frequency division multiplex) equipment and television transmitters. Its first FDM installation was at the Kuantan satellite station.

In the second half of 1978, Pernas-NEC undertook the modification of 20 television transmitters from black and white to colour to enable Television Malaysia to start colour transmission at the end of the same year.

Its more recent projects include the installation of FDM equipment for the Kuala Lumpur multi-exchange area and multiplex equipment for the Kuantan-Kuching submarine cable system and the new Malacca satellite station.

Dr Syed Hussein, who joined the company in 1974 after a stint with two other establishments, is confident of the ability of the company to meet the expectation of the huge contract.

Of the success of Pernas-NEC so far, he said: "It shows that a Bumiputra business entity can do as well as other business organisations."

CSO: 5500/8503

MINISTER REVIEWS TELECOMMUNICATIONS PLANS, ACHIEVEMENTS

Kuala Lumpur BUSINESS TIMES in English 16 May 81 p 7

[Message by Datuk Leo Moggie, Minister of Energy, Telecommunications and Post]

[Text]

FOR the Fourth Malaysia Plan commencing this year, the government has allocated $4.45 billion for the Telecommunications Department as an effort to further develop and modernise the telecommunications network system in the country.

2. With this capital-intensive investment it is projected that the department could reach out into all aspects of telecommunication needs which would certainly reach the medical sector henceforth highlighting the theme for this year's World Telecommunications Day — *Telecommunications and Health*. The projects carried out by the Department of Telecommunications, following the latest technological breakthrough might not, initially be reverted to the medical sector but indirectly it helps with the provision of medical and health services for the public.

3. A historic moment in 1980 was the launching of the first submarine cable inter-linking Sabah and Sarawak with Peninsula Malaysia, the end stations being in Kuantan for the peninsula end and Kuching for the Sabah and Sarawak station. With the launching of this $84 million cable on the 31st August, 1980 by YB Datuk Hussein Onn, subscribers are now able to have ordinary subscriber trunk dialling (STD) service between the two regions. The extension of this STD facility to Sabah and Sarawak acts as a motivating factor in the prospective of socio-economic and political development in the country.

4. 1980 also saw the introduction of the first fully electronic (computerised) exchange system, the Stored Programme Control (SPC) to accommodate the local networks in the country. This was commissioned in the Pelangi exchange in Johore Baru supporting an exchange line capacity of 20,000. This system would be commissioned in Kuala Lumpur in the very near future to facilitate the ever increasing demand for telecommunication services from all sectors in the country.

5. The International Subscriber Dialling facilities now available only in a few major cities will be further extended to all regions giving priority to larger urban and city areas.

6. A new breakthrough for Malaysian Telecommunications would be the Public Data Switching which includes viewdata service. It is a computer service developed through the formation of a digital network system, the Integrated Services Digital Network. This project, still being under an in-depth study, once proven feasible would provide for the public an easy access of current day-to-day information like the weather, market prices, race results and even up-to-date international events through their television screens.

7. In meeting with the latest technological development in the field of external communications and as an effort by the government to extend the systems' network to countries overseas, a second earth satellite station would soon be commissioned in Malacca. Also with the recent signing of agreement between the Commonwealth countries involved, a submarine cable link between Madras and Penang would soon be operational. With the completion of this project, Malaysia is now able to get a wider scope of external communications network to countries overseas.

8. Having allocated a large budget under the 4th Malaysia Plan, the Telecommunications Department would meet the rising demand of telecommunication services by increasing the labour and manpower. In return, to provide a better service professionally and technically sufficient training must be made available for the staff.

9. Henceforth, my Ministry with adequate feedback with the Telecommunications Department has planned to build three Telecoms training centres, initially in Kuala Trengganu, Malacca and Taiping and at a later stage one each for Sabah and Sarawak.

A staff college would also be built, which would integrate both the Telecoms Headquarters and a comprehensive training college for senior officers of the department. This move is to ensure that the public gets the type of service that is acceptable in the light of the latest technological experiences in the country.

CSO: 5500/8503

RAILWAY TELECOMMUNICATION SYSTEM BEING MODERNIZED

Karachi DAWN in English 19 Jun 81 p 20

[Text] Pakistan Railways have undertaken work on the modernisation of its telecommunication and signalling system which would improve efficiency of train operations and make room for other sophisticated systems such as computerised traffic control, seat reservation, hot box detectors and automatic train control, according to official sources.

The project having been approved by the Government, is likely to cost Rs. 723.3 million inculding Rs. 375.7 million in foreign exchange.

It envisages installation of 960-channel Microwave and 36-channel Ultra High Frequency (UHF) system from Rawalpindi to Karachi along the main line; Kotri-Habibkot, Kukkur-Jacobabad-Kit Adu Branch lines over a distance of about 2000 kilometers. The VHF radios would also be provided on at least 500 locomotives.

Direct dialing facilities would be provided at all important stations. The old and obsolete block instruments would be replaced with the automatic signalling at about 70 Railway Stations in the country when the project is ready.

According to programme a switching processor would also be installed at Lahore and data terminal at about 80 different locations to facilitate the exchange of operating and administrative messages.

The Railways administration is also setting up training centres for providing necessary training to the staff members for running the modern tele-communication system.

CSO: 5500/4584

PEOPLE'S REPUBLIC OF CHINA

LARGE-CAPACITY MICROWAVE COMMUNICATIONS SYSTEM DEVELOPED IN XIAN

Xian SHAANXI RIBAO in Chinese 28 Apr 81 p 1

[Article by He Tingrun (0149 1694 3387) and Zhu Tiansheng (2612 3944 3932)]

[Text] A new type of large-capacity communications system--a 6,000-megahertz, 1,800-channel, telephone and color television microwave relay communications system--has been developed in the PRC by scientists and technicians of the Ministry of Posts and Telecommunications' [MPT] Fourth Research Institute after over 6 years of work. It recently passed technical appraisment in Xian. This communications system is a key developmental project of the State Scientific and Technological Commission. Its success will fill the new frequency band gap in the PRC's communications. It will provide a complete set of useful equipment to the PRC's communications establishment and the television broadcast industry. Also, this system will play a major role in alleviating the current communications' overload, in speeding up posts and telecommunications modernization and in developing the television broadcast industry. This system has 8 channels, each of which can carry 1,800 telephone conversations simultaneously or transmit facsimile, telegraph, broadcast and data with similar capacity. When used for television transmission, each channel can transmit 1 color television video signal and 4 accompanying audio signals. Its total capacity is double the 960-channel microwave communications system presently used in the PRC. In addition to the large capacity, the equipment uses less power and is smaller, more stable and reliable. Research on this new microwave communications system began in 1975. This gratifying achievement was accomplished after 6 years of closely coordinated effort by many scientists, technicians and workers of the MPT Fourth Research Institute, overcoming hardships and problems.

CSO: 5500/4002

BRIEFS

SATELLITE STATION--The Guatemalan Telecommunications Enterprise inaugurated a ground satellite station in El Pajon, Santa Catarina Pinula, Guatemala Department today. This station cost 9 million quetzals and will permit direct communication between Guatemala and the rest of the world through satellite. [Guatemala City Radio-Television Guatemala in Spanish 0400 GMT 19 Jun 81 PA]

CSO: 5500

PRAIA-MOSCOW POST, TELECOMMUNICATIONS AGREEMENT SIGNED

Praia VOZ DI POVO in Portuguese 1 May 81 p 2

[Text] A postal service and telecommunications agreement between the USSR and the Republic of Cape Verde, aimed at establishing contacts by sea and air routes, was signed in the afternoon of 20 April at the Ministry of Foreign Affairs.

In the sector of postal service, the agreement provides for regular, direct and in-transit postal exchange of regular and registered mail--namely letters, postcards, publications, parcel post and packages--with all responsibility by the contracting parties for loss, spoilage or damage of registered mail and packages, except under special circumstances.

In the field of telecommunications, the exchange will cover telegrams and telephone calls of all categories established by the ITU (International Telecommunications Union) and the CCITT (International Telephone and Telegraph Consultative Commission) regulations now in effect.

Cape Verde was represented by Minister of Foreign Affairs Comrade Silvino da Luz and the USSR was represented by its ambassador to our country, Leo Krylov.

This agreement, which will be valid for 3 years from the date of its signing, can be renewed automatically for successive periods, should any of the parties fail to inform the other in writing of its intention to revoke it 6 months before the expiration date.

According to the signatory for Cape Verde, Comrade Silvino da Luz, who spoke on the occasion, the agreement is a proof of "unlimited trust that guides the action of those who throughout the world consistently struggle to create a modus vivendi of respect, friendship and fraternal cooperation."

Continuing his speech the chief of Cape Verdian diplomacy said that "bringing our postal services closer together, disseminating the stamps of one country in the other, receiving in Moscow or Praia the constant chatter of telex machines and more signals coming from the other side, we will propagate in our countries," he said, "the image of the people of the USSR and the Republic of Cape Verde, contributing to the mutual knowledge of sociopolitical, economic, cultural situation and geography of each country, confident in the future of the world which will some day belong to the most humble of workers of the countryside and the city, and their allies, the rebels of the earth, to captains of sand of all beaches, men of all continents with dreams of a radiant and just future."

In reply the Soviet diplomat, making reference to the friendship between the two countries, said that it is already an old friendship, which started from the beginning of the liberation struggle for the independence of Cape Verde.

Present at the ceremony were the director general of posts and telecommunications of our country and the commercial attache of the USSR and other officials.

11635
CSO: 5500/5022

NEW RADIO EQUIPMENT PERMITS COUNTRYWIDE RECEPTION

Praia VOZ DI POVO in Portuguese 1 May 81 p 4

[Text] The official broadcasting station now has an entire network of complementary transmitters distributed in various points of the country--namely, in Monte Chota, Fogo, Sao Vicente and Sal--aimed at giving complete coverage to the entire nation.

The purchase of these transmitters and various laboratory equipment is within the framework of the project of educational radio, sponsored by UNESCO and financed by the FRG.

The placement of this equipment in various points that naturally seem the most suitable for radiobroadcasting led to substantial improvement of reception conditions, mostly with the equipment of Monte Chota which has a tower for directional antennas for four different directions. This allows satisfactory reception throughout most of the country, with the exception of some islands: Fogo, Brava and St Antao. Monte Chota also has two transmitters of 100 and 10 watts, respectively, the latter working as a reserve system.

The mountainous terrain on some islands prevents reception. These islands are Brava and Fogo, where the volcano blocks the reception. In some way this reflects the complex situation and the lack of information which still affects our country. However, in the field of institutionalizing social communications envisaged in our government program, efforts are being made to end this deficiency. Thus, another transmitter was installed in the city of Sao Felipe--Fogo Island--on 29 April to cover the traditional and important celebrations of 1 May, and to serve as relay to Brava Island.

In addition, there is a plan for gradual remodeling of the official transmitter which has already started by placing an antenna with longer reach, and replacement of the old transmitter by one of 100 watts, that is, one 10 times as powerful as the previous one.

St Antao and Sao Vicente and Sal islands will also be included, with the installation or replacement of transmitters to guarantee good reception on the national level to all radio listeners.

11635
CSO: 5500/5022

BRIEFS

CONGO TELEPHONE COMMUNICATION RESUMES--Telephone communication by satellite between the People's Republic of the Congo and the outside world resumed this morning after a break of about 2 weeks. Comrade David (Jibata), the engineer in charge of international telecommunications at the department of posts and telecommunications, has stated that the interruption was due to the need to carry out some investigations. [AB050933 Brazzaville Domestic Service in French 1245 GMT 1 Jul 81]

CSO: 3500/5039

BRIEFS

TELSPACE STATION--The first telecommunications station by satellite installed in Guinea by Telspace has been inaugurated. Built in Wonkifong, 70 kms from Conakry, the station is equipped with an antenna measuring 14.5 meters in diameter. It is connected to the capital by a microwave link with a capacity for 960 telephone circuits. In its first phase, the station opens direct high-quality telephone, telex and cable connections with the United States, the Ivory Coast and Senegal. The station can also broadcast or receive worldwide network television programs. [Text] [Paris ELECTRONIQUE ACTUALITES in French 29 Jun 81 p 8]

CSO: 5500/5037

TELEPHONE, TELEX CONNECTIONS TO EUROPE SAID COMPLETED

Kampala UGANDA TIMES in English 25 May 81 p 3

[Text] Telephone and telex circuits have connected Uganda to Italy and West Germany through the Mpoma EEarth Satellite Station near Mukono town.

The station, constructed by a Japanese firm, the Nippon Electric Company (NEC) was completed at a cost of 80m/-.

A statement issued in Kampala yesterday by the Uganda Posts and Telecommunications Corporation (UPOTC), said three telephone and telex circuits had been connected to Italy, four to West Germany, and the circuits for France and London, were being worked on. Later there will be a direct circuit link with the United States of America.

The Mpoma satellite was last Saturday used in relaying the soccer match between Nile Football Club and El Asly of Egypt in the Africa Club Soccer Championship.

Work on the construction of the satellite, which is of "standard A", at Mpoma, 30 km from Kampala on Bugerere road, began in May 1978. Civil works on the satellite cost 50 m/-, and was carried out by Roko Construction Company and the electrical assembly was done by NEC.

This work was interrupted by the liberation war in 1979, but after the war it resumed unhindered.

CSO: 5500/5041

FOUR REGIONAL TRANSMITTERS' INSTALLATION TO BOOST RECEPTION

Lusaka DAILY MAIL in English 20 Jun 81 p 5

[Text] Radio reception in the rural areas will greatly improve following the installation of four regional transmitters in Kasama, Chipata, Mongu and Solwezi.

Zambia Broadcasting Services (ZBS) chief mechanical engineer, Mr Churchill Mutale, said yesterday that the four K300,000 transmitters were now fully operational and should boost radio reception in Northern, Eastern, Western and North-Western Provinces.

He said that each transmitter covered a radius of 80km during the day and 150km during the night. The transmitters, each of which now operates on 10 kilowatts, were bought from Harris Company of America.

Mr Mutale said that engineering tests on the four transmitters started last year but there was little that could be done to boost radio reception in the four provinces because ZBS was still awaiting good programme lines from the Posts and Telecommunications Corporation (PTC).

"We have now been provided these lines by the PTC and it is as a result of this that we have put the transmitters on full power. During preliminary tests, they were operating on quarter power.

"We are now covering a radius of 80km during the day and 150km during the night. As a result, if you go to Chipata now, you can't believe that you are in Chipata. You would think you are in Lusaka since radio reception is so good," he said.

The chief engineer disclosed that his department was also working on a regional station at Mansa to improve radio reception in the Luapula Province. This transmitter will also initially operate at 10 kilowatts.

In reply to a question, Mr Mutale said that as a result of the installation of the transmitters, Chipata and Kasama had television services and that his department was now working on Mongu television line.

He said that it would take time for Solwezi to have television services because PTC had not provided the area with a microwave link. He said that as soon as this was done, the question of television services for Solwezi would be considered.

CSO: 5500/5038

MUGABE OFFICIALLY OPENS NEWS AGENCY

Breaking South African Connection

Salisbury THE HERALD in English 1 Jul 81 pp 1, 8

[Text]

A SWITCHING ON of power ceremony conducted by the Prime Minister, Mr Mugabe, last night officially opened the Zimbabwe Inter-Africa News Agency.

"The establishment of Ziana as a national news agency ranks as a step ahead in the consolidation of our independence," Mr Mugabe said.

As Mr Mugabe switched on the power in the new premises of the national news agency, teleprinters began chattering, connecting Ziana with international news agencies and with its local subscribers, which include the Zimbabwe Newspapers and the Zimbabwe Broadcasting Corporation.

He said the occasion marked the disengaging of the domination of South Africa in local news agencies which was greater than its involvement in the country's newspapers.

The news agency was formed in 1961 as a subsidiary of the South African Press Association.

"Ziana was wholly owned and controlled by Sapa and remained a subsidiary for many years," Mr Mugabe said.

"Its managers were appointed in Johannesburg from where news was edited, prepared and distributed to Zimbabwe. This situation was inherited at independence," he said.

Last night's ceremonial switch-on of power was watched by Cabinet Ministers, Government officials, members of the diplomatic corps and both local and foreign journalists at a reception to mark the occasion.

"This situation made a mockery of our status and national pride. It was politically intolerable.

"The establishment of Ziana signifies a step in the continuing struggle to decolonise the mass media.

"This process of disengagement started last year with the setting up of the Mass Media Trust under the chairmanship of Dr Davidson Sadza. The trust acquired all the shares of the Argus ownership and control of the newspapers which brought to an end 90 years of control by the Press barons of South Africa.

"The situation is now both meaningful and tangible."

Mr Mugabe said the Mass Media Trust would reverse the colonial trend in the media and make it serve the interests of the people. It should then reflect the wishes of the dominant force in the country — the masses.

Ziana, as well as becoming a member of the Pan-African pool of news agencies, will also join the non-aligned pool of news agencies which today comprises more than 70 national news agencies from non-aligned countries throughout the world.

As from today, news to Zimbabwe will no longer be channelled through, edited or bear the old colonial imprint of South Africa, Mr Mugabe told the gathering.

He congratulated Ziana and its staff on their coming of age. Warning that the agency had to take full cognisance of its primary objectives — casting its net into the national and international network of news and bringing out a meaningful series of stories.

The task, he added, required the infrastructure already obtained and astute, vigilant and dynamic workers. He was glad that the agency had been linked to the non-aligned pool.

Mr Mugabe said that Zimbabweans were now grown up and mature enough to reject Western bias interpretation to news.

"We must develop our own national identity and perspective. We need to interpret news in terms of our own interest.

"Yet we need accurate and objective reporters. We need more partial and factual reporting than existed during colonial or UDI days.

"For this we need to examine, explain and enunciate our own policies. We must not find ourselves at cross-purposes on policy," he said.

Mr Mugabe then paid tribute to all those who had helped in the setting up of Ziana.

'HERALD' Comment

Salisbury THE HERALD in English 1 Jul 81 p 8

[Editorial]

[Text] AS a rule, the Zimbabwean Press can only be as good as Zimbabwean society. It cannot exist in a vacuum, creating news features and pictures out of nothing. It can try to change society, although this is so ambitious a goal that very few newspapermen with their feet firmly on the ground have tried it seriously.

In the colonial days, very few newspapers in the then Rhodesia promoted the idea that the African should run the country, or that Zimbabwe/Rhodesia was an evil, blood-sucking monster which had to be destroyed at all costs.

Those which championed the cause of African advancement were not many and their voices were usually drowned in the din from the big dailies and Sapa, financed by the South Africans.

Today, the Zimbabwean Press has come into its own. Even with Government partial ownership it cannot be written off simply as a "mouthpiece". It may not yet have chalked up scoops in the tradition of Western newspapers, but give it time. It will. Today we wish to welcome Ziana into the fold of the Zimbabwean Press.

The Zimbabwean Press should be a reflection of the masses, their leaders, their hopes, their despairs, their aspirations, their failures and their successes. It is a mirror of society; it should reflect society to itself.

That is to say, if one day there is a preponderance of crime coverage in our columns, it does not mean that the editors have sat down and decided that crime is the most important aspect of Zimbabwean life.

The role of the Press in nation building of a developing country such as ours is to honestly and courageously help the Government in identifying those programmes which will benefit the masses to the maximum. In Zimbabwe, since taking over as editors, we have been called upon to cover the rural areas, to highlight rural development and to rhapsodise the advantages of rural life.

All this has been done, in many instances, with remarkable success. However, the Press is not superhuman. It cannot create abundance in the rural areas when there is none, but should our Press hide or reveal what is hidden against the masses?

This is easy to explain: In Zimbabwe, as everywhere else in Africa, there are some people who believe that what the masses don't know won't hurt them. In other words, they would prefer government by secrecy, a government whereby the masses are kept completely in the dark about how the Government operates.

Happily for Zimbabwe, our Prime Minister has said on numerous occasions, as indeed yesterday, that he wants journalists to be objective in their reporting. In other words, he wants to see an "open" government. Still there are, among our leaders, people who would prefer the Government's mistakes to be kept secret.

As Ziana now finds its feet as the country's sole news distributor, it will also have to remember that journalism is all about telling the truth, dealing with facts, however painful they may be either to the readers or to those about whom they are being written.

And, lastly, we want to pay our tribute to Dr Sadza, Mr Mandebvu and Mr Mbanga, who worked so tirelessly in the setting up of Ziana against impossible odds--some deliberately created.

CSO: 5500/5040

USSR

TV BROADCASTING IN THE TENTH FIVE-YEAR PLAN, FUTURE DEVELOPMENT

Moscow TEKHNIKA KINO I TELEVIDENIYA in Russian No 2, Feb 81 pp 3-6

[Article by V.M. Palitskiy and G.T. Deriban]

[Text] The basic directions for television during the 10th Five-Year Plan included: increasing the coverage of the population by central TV programs, the further development of color TV, the modernization of the production and engineering base of television centers as well as putting local TV broadcasting in good order. New third generation studio equipment was designed, put in production and placed in service over the years of the 10th Five-Year Plan.

The overall volume of TV broadcasting in the nation (central, republic level and local) practically did not change over the 10th Five-Year Plan. The average daily broadcasting volume amounted to 423.1 hours in 1980. However, substantial changes occurred in the structure of broadcasting. In the Ninth Five-Year Plan, central television broadcasting repeated only one duplicate of the first all-union program ("Vostok") for the regions of the Urals and Central Asia; the "Orbita" program was extended to all time zones without shifting the time. At the present time, the broadcasting of the first all-union program has been organized on a four time zone basis.

The first all-union program (the main one) covers the 0 to +1 time zones; the duplicate of the first "Orbita-3" program, the "Vostok", covers the +2 to +4 time zones (and the 0 time zone for the regions of the Far North); the "Orbita-2" program covers the +5 to +7 time zones; the "Orbita-1" covers the +8 to +10 times zones. The duplicates of the main program are repeated with a time lead of 2, 5 and 8 hours respectively. Such a time structure for the organization of broadcasting has made it possible for television viewers in all of the nation's regions to receive the program at time relatively convenient for viewing, however, in the +4, +7 and +10 time zones, the first all-union program is still shifted relative to the optimum time by two hours, something which causes justified complaints by television viewers of the late conclusion of the programs.

The development of all-union multichannel broadcasting was started and continued over the years of the 10th Five-Year Plan. As result of the work which had been done in rebuilding the ground based TV network and the introduction of new satellite communications systems, the residents of a number of oblasts of the RSFSR and union republics gained the capability of receiving the second all-union program.

At the present time, the second all-union program includes a block of the third and fourth color television channels on weekdays and the full set of color television channel four programs on weekends.

The majority of television centers (committees) relay the second all-union program in its full amount (or the maximum possible, if they relay the local program on this same channel). A number of television centers still receive the second program in an abbreviated form through a space communications channel following the completion of the "Orbita-2" program. The program is transmitted at the present time without time shifts and is received in the 0 to +2 time zones (partially in the +3 zone).

A transition is being made at the present time to five time zone broadcasting of the first and two time zone broadcasting of the second all-union program. For this, four and two duplicates of the all-union programs will produced respectively, something which will make it possible to receive the first all-union program in all zones under optimal conditions (with a shift of no more than one hour), and the second all-union program in the 0 to +5 time zones at a time relatively convenient for viewing. The volume of central television broadcasting via the main channels over the 10th Five-Year Plan increased by about 10 percent (from a daily average of 28.7 hours in 1975 to 31.8 hours in 1980). The overall volume of color television broadcasting (taking into account the newly created duplicates of programs) grew by 88 percent and by 1981 will amount to 136.6 hours.

The transition to relaying duplicates of the first all-union program has made it possible to put local broadcasting in good order; its overall volume was curtailed by about 15 percent (from a daily average of 397.6 down to 342.2 hours), primarily because of the reduction in the volumes of "other" broadcasting (exchange materials, reruns, etc.). Over the period since 1976, 11 TV centers, the operation of which was recognized as inexpedient, were closed. Television program coverage is assured by radio relay links and cable trunks with a length of about 100,000 km (at the end of 1980, 97,800 km), as well as via satellite communications channels of the "Orbita" and "Ekran" systems. The television broadcast transmission network includes about 3,000 stations, of which 433 radio transmitting and repeater stations are high power ones.

Some 26 high power and 25 low power stations operate in the decimeter band.

Over the years of the 10th Five-Year Plan, the length of the program transmission network increased by more than 25,000 km, 91 high power and about 1,000 low power repeaters were placed in service, 20 receiving stations in the "Orbita" system were constructed and the "Ekran" satellite communications system was designed and placed in service. At the present time, 85 "Orbita" system receiving stations receive central programs through "Molniya", "Raduga" and "Statsionar" satellites. About 800 "Ekran" system receiving stations provide for the reception of the all-union program.

More than 26 million additional persons have gained the capability of receiving TV programs over the years of the 10th Five-Year Plan. The first all-union program is received over a territory where more than 220 million people live (85 percent) and the second program can be received by about 33 percent of the nation's population (87 million people). About 158 million people (64 percent) live in the coverage area of the two TV programs. About 34 million people (14 percent) can watch three and more programs.

Some 70 television centers of the nation's 121 television centers are engaged in color television broadcasting. However, only 36 television centers have a full complement of color equipment. The overall volume of color transmissions of all of the nation's television centers grew from a daily average of 50.9 hours to 211.7 hours over the five-year plan, i.e. more than quadrupled. All of the central television programs are transmitted in color. More than 60% of the republic level television centers provide color relaying (78 hours out of 129 hours). However, in terms of the technical capacilities of the as yet not fully reconstructed technical facilities of the all-union TV program distribution network, color television reception and transmission is possible for only 70 percent of the territory covered by TV broadcasting. The reception of color television broadcasts by the populace is also limited by the inadequate number of color television sets.

Over the years of the 10th Five-Year Plan, the quantity of color television sets has grown by a factor of more than six times. The total amount of TV sets in the nation is approximately 75 million at the present time (of them, 8.5 percent are color), and the averaged indicator for the quantity of TV sets amounts to 98 units per 100 conventional families, living in a TV program reception area.

The production engineering base for the preparation of TV programs has undergone a substantial development. A significant stage in its development is the placing in service of the new facility of the Technical Television Center imeni 50th Anniversary of the October Revolution: the ASK-III. Having been completely constructed and outfitted during the 10th Five-Year Plan, it successfully performed the functions of the Olympics Television and Radio Center during the period of providing relay broadcasts from the 22nd Olympic Games. The Olympics Television and Radio Center was designed, in contrast to its predecessors, not as a temporary facility, but as a complex of technical facilities for multiple purposes. As early as October of 1980, the creation of the requisite number of duplicates of all-union programs was started at the ASK-III.

The television section of the Olympics Television and Radio Center includes three program-equipment room complexes (APK's) and 16 program-equipment room units (APB's). There are two APB's included in the complement of each complex: one with a studio having an area of 60 m^2 (with three TV cameras) and another with a studio of 150 m^2 (with four TV cameras). There is a television motion picture film equipment room in each complex with three 16-mm television motion picture projectors and two television slide projectors, as well as a video tape recorder equipment room with 12 video tape recorders and an instant replay equipment room. The APB's have a studio with an area of 60 m^2 having three TV cameras. The technical capabilities of the APB's can be expanded by means of a central video tape recording unit and a central television motion picture unit.

Special attention was devoted to switching systems (of the central equipment room) in the design of the Olympics Television and Radio Center. It switching capacities, technical equipment and production flexibility completely satisfy the requirements for the future utilization of the Olympics Television and Radio Center. The central equipment room has equipment for video and audio switching matrices, input and output regulating amplifiers, cable equalizers, remote control equipment for video tape recorders and television motion picture projectors, maxtrix technical monitor consoles, equipment for automatically monitoring the parameters of video channels, centralized synchronization equipment for internal and external sources, equipment for parameter tolerance monitoring of video signals, clock and test signal transducers, video monitors and oscilloscopes.

The Olympics Television and Radio Center is equipped with third generation "Perspektiva" type TV studio equipment. It meets the high modern requirements and provides for the requisite picture quality.

The application of functionally new devices in the equipment complex (electronic rear projection, special effects, equipment for showing the text of a speaker, electronic clocks with displays of both the current and sporting event time, equip- for generating and inserting captions, electrically coloring a background, etc.) will make it possible to substantially expand the creative and technical capabilities of studio equipment and assure the state of the art in program production technology. Integrated circuits are widely used in the equipment. The average percentage of integration is 65 to 75 percent. Equipment reliability has been increased. In all, 22 sets of programming-equipment room blocks have been installed, 39 television motion picture projection units, about 170 video tape recorders, 3 photographic processors, 40 audio production boards and other permanent equipment have been installed at the Olympics Television and Radio Center. Moreover, the fleet of mobile technical facilities of the technical television center have been supplemented with models of domestic equipment for outside the studio which are of the latest designs: the "Magnoliya" and "Magnoliya-80" mobile television stations, the PVS-4 [not further defined] and a certain amount of news reporting equipment of foreign manufacture.

The production and engineering base of republic and local broadcasting underwent further development.

In the current five-year plan, 12 studio and equipment room complexes for television centers have been constructed. Moreover, the construction of four studio and equipment room complexes, started in the 10th Five-Year Plan, should be completed in the period 1981-1985. Only color television equipment has been delivered to television centers in the 10th Five-Year Plan. In all, 103 permanent studio and equipment room complexes, about 70 mobile TV stations, about 100 video tape recording stations, more than 300 video tape recorders, 97 photographic processors and 1,160 motion picture cameras and other equipment have been delivered.

Despite the successes which have been achieved in the development of the USSR television system in the period from 1976 to 1980, the demands of the nation's populace for multiple program color TV broadcasting has still not been completely met at the present time. There are a number of problems, the resolution of which is going forward at an inadequate pace. The scope of the assigned tasks, which are being successfully fulfilled by Soviet television provides a basis for stating that at the present stage, it has become an indispensable part of the lifestyle of the Soviet people, penetrating all sectors of their activity and cultural leisure. In this regard, the most important task is 100 percent coverage of the nation's population with television programs.

It is impossible to be reconciled to the fact that about 15 percent of the nation's population is deprived of the possibility of watching television. At the present stage, this is not simply a lack of additional information or a means of diversion, but a serious detriment to the lifestyle of the Soviet man and the formation of his personality. This situation is exacerbated by the fact that the rural population is covered to an even lesser extent by television broadcasting (69 percent), i.e., those layers of society which are most in need of it.

The population of the boundless wide open spaces of Siberia, the Far East and the nation's northern regions having a large number of small populated points is provided only with unreliable shortwave broadcasting. These are the regions where television is especially needed and where an influx of new residents is particularly important.

A total of 40 million persons is not covered by TV broadcasting in the nation, including 27.4 million in the European area. In order to provide television to the remaining 15 percent, it is necessary to cover about an additional 70 percent of the nation's territory.

At the present time, television programs are transmitted primarily in the meter band, the capacity of which for multiple program broadcasting has practically been exhausted. The decimeter band is as yet inadequately utilized in domestic TV broadcasting practice. Only about 50 decimeter-band transmitters are in service in the nation.

Yet another extremely important problem in providing color TV broadcast programs to the nation's populace is increasing the number of color television sets. The demand for color television sets considerably exceeds their production.

The major task in the development of the television system is the complete coverage of the population with multiple program color TV broadcasting. The resolution of this problem in the upcoming decade is an altogether urgent issue in the scientific and engineering plan. However, it must be noted that while preserving the traditional principles for the organization of broadcasting, the needs of financing the development and operation of the system are growing considerably. Because of this, it is expedient to provide for a number of measures which assure the most efficient structure for the system and the acceleration of the timeframes for the development of the most important systems and equipment.

Further centralization of the broadcasting is needed first of all. Besides ideological factors, the centralization of broadcasting also pursues other goals. A concentration of the material and technical resources is provided, primarily for the modernization of the nation's largest TV centers and more active participation of local studios in the production of all-union programs.

The lack of centralized program feed capabilities in the initial developmental stages of the TV broadcasting system led to the creation of a considerable number of TV centers in the nation's territory, which provided for broadcasting in the corresponding regions of the nation. The function of local broadcasting changes substantially with the universal dissemination of all-union programs. In particular, the nature of the second all-union program has been defined in the main developmental trends for television and radio broadcasting as artistic and informational. In this case, the issue in mind is the transmission of materials in this program concerning the social, political, economic and cultural life of all of the nation's regions. The task of providing the second channel with high quality programs of various forms and genres is to be accomplished primarily by the television centers of large industrial and cultural centers. The remaining (small) television centers should produce primarily information subjects for the second channel.

It is expedient to convert a number of small television centers to TV correspondent stations. The product of a correspondent station should be predominantly of an informational nature (informative subjects). However, a portion of the material can be produced in the form of finished documentaries (sketches, news reports). All of the programs (subjects) produced by a correspondent station should arrive at a television center in finished form on video tape, or in exceptional cases, in the form of "live" news reporting for the all-union or local programs.

The planned achievement of complete coverage of the nation's populace with multiple program TV broadcasting is possible only after the introduction of a fundamentally new space broadcasting system in the 12 GHz band. Its functional capabilities should provide for the following:

--The creation of the requisite number of channels for the transmission of the three all-union television programs (and the four radio broadcasting programs) over all of the nation's territory, with a time shift in the five broadcast zones;

--Reliable reception of the all-union programs over all of the nation's territory on both individual and collective receivers.

It is likewise necessary to deal with the question of the use of space systems for the dissemination of republic level programs.

The introduction of satellite TV broadcasting systems in the 12 GHz band, besides complete coverage of the nation's populace with television programs and reception at a time convenient for the populace, will likewise provide for a significant savings in operational expenditures for program dissemination.

The dissemination of all-union programs in the form of the main program and four duplicates in the five broadcast zones is not the final solution of the problem of receiving them at a time convenient to the population. In the odd time zones, the programs will be received one hour later, and in the 10th time zone, two hours later than the convenient time. An increase in the number of channels for the transmission of the all-union programs up to 33 (setting up 10 duplicates of each of the all-union programs) is not a feasible task in the foreseeable period both in technical and organizational terms.

In solving the problem of uninterrupted and high quality TV program transmission, the proper organization of measurements and monitoring during operation plays a considerable part. With the development of the "Perspektiva" equipment, some of the system design questions were solved for the monitoring of the qualitative indicators of both equipment and the broadcasts; models were worked out for modern monitor and measurement instruments for television centers, radio transmitting stations and television receiving equipment, including models based on digital techniques, suitable for automated monitoring.

Along with providing for the urgent needs of TV broadcasting, television engineering is confronted with new problems: assuring the development of new standards for color television of increased clarity, for cable television networks and for digital equipment. The equipment of complex TV broadcasting channels, based on a wide range of modern TV equipment facilities, has brought up the problem of setting thoroughgoing standards for channel indicators, as well as standardizing the processes, parameters and metrological support as a whole.

The main tasks in the 11th Five-Year Plan are: Further centralization of broadcasting, increasing the coverage of the population with TV programs which can be received at a time convenient for viewing, and the expansion of color television. The average daily volume of Central Television broadcasting (taking duplicates into account) will more than double over the years of the 11th Five-Year Plan, from 82.4 to 177.0 average daily hours. The volumes of republic level programs during 1981 - 1985 will increase by 17 percent from 124.5 to 145.7 hours, where the average daily volume of these programs will reach 10 to 12 hours in the majority of republic committees.

The realization of the developmental program for all-union broadcasting in the 11th Five-Year Plan will be based primarily on the efficient utilization of the new facility of the Technical Television Center imeni 50th Anniversary of the October Revolution, the ASK-III (Olympics Television and Radio Center). In this case, the principle of the functional subdivision of the television program production and feed processes will be realized to the greatest extent. The production of programs in the form of finished transmissions primarily on video tape will be handled in the ASK-I and ASK-II of the Technical Television Center. In this case, the creative and technical capabilities will be significantly expanded by virtue of a further re-equipping of TV production with new equipment, as well as an increase in the production areas because of the housing of a number of services in the ASK-III. The production and feed of all-union programs and their duplicates will be accomplished in the programming and equipment room units of the ASK-III, the number of which will completely provide for the planned volume of multiple program all-union broadcasting for the next decade (three programs with their duplicates for the five broadcast zones each).

The buildings and hardware of the ASK-III will likewise make it possible to accomodate and support the operation of the most flexible television services (in terms of processing operationally timely information): the main editorial staffs for information and sport programs. Studio-equipment room complexes will be used for this purpose, which include two studios each and the requisite amount of video tape recording and television motion picture projection equipment. In the motion picture complex of the ASK-III, the creation of 16-mm documentary or artistic films is planned, to be produced by the creative "Ekran" association, as well as the processing of 35-mm slides and their printing in several copies for the needs of the nations TV studios, the operationally timely processing of motion picture film materials for the "Vremya" program and a series of other works.

The coverage of the nation's populace with all-union TV programs planned by the USSR State Committee for Television and Radio by 1986 is as follows: 92 percent covered by all-union program I; 72 percent by all-union program II; and 60 percent by all-union program III.

The development and organization of the series production of a series of automated unattended TV transmitting stations and repeaters are planned for subsequent five-year plans to expand the TV broadcasting system. A provision has been made for the development of a new multichannel TV broadcasting system in the 12 GHz band. By the middle of the 11th Five-Year Plan, it is planned that a complete changeover will be made to color television broadcasting by all republic level television centers, and by 1985, color television programs will be produced in more than 80 of the nation's television centers.

During the five-year plan, television centers will be retrofitted primarily with "Perspektiva" equipment, the "Magnoliya" mobile television units, the PTVS-ZTsT, PVS-4, the "Kadr-ZPM" video tape recorders and portable news reporting TV stations. It is planned that series production of modernized studio and equipment room equipment for three to five camera channels ("Perspektiva-M") and equipment room and programming equipment for two to three camera channels will be started in 1983. Beginning in 1984, the new "Magnoliya-M", PTVS-ZTsTM and PVS-4 mobile stations will be started in production and at the end of the five-year plan, the ASK central equiprooms and portable news reporting complexes for television journalism will be started.

During the five-year plan, the design of fourth generation equipment will be realized, while series production of this equipment will get underway in subsequent years. Integrated circuits and digital technology will be widely used in it. By the end of the five-year plan, the fabrication of equipment prototypes for digital signal conversion at television centers is planned, including equipment based on image frame memories (standards converters, synchronizers, distortion equalizers, noise suppressors, etc.); also planned is the fabrication of a family of news reporting analog-digital cameras based on CCD matrices, a fourth generation mobile color television station, equipment for video recording in digital form, etc.

Scientific research and experimental design work in the field of improving the existing and developing new TV systems should be carried in the period 1981-1985. The potential possibilities for improving TV broadcast quality within the framework of the existing color TV system have not been fully realized. There are great reserves in the refining of transmitting and receiving tubes, as well as the modernization and design of new kinds of color television equipment, for which the requisite research should be done.

The major requirements placed on new equipment reduced to the following indicators: expanding creative capabilities in the production of TV programs; improving labor productivity for creative and technical television workers; and improving TV signal quality.

Within the framework of refining the existing color TV system, attention should be devoted to questions of designing new light sources with higher light output levels per watt of power; and searching out conditions which create comfortable conditions for particpants in programs when the special lighting is turned on. Automated systems are of great importance for increasing the labor productivity of creative and technical workers. Along with local systems for individual devices (cameras, video tape recorders), automated control systems for technological processes should be developed and introduced (automated electronic montage, automated program feed, information retrieval systems), as well as multifunction systems (operationally timely equipment distribution and dispatcher control, information and measurement systems, etc.).

The next step in TV broadcasting equipment should be a high resolution color system. The devices which have been developed at the present time in applied television with a scanning standard of 1,125 lines have demonstrated an extrememly significant improvement in picture quality. Increasing the number of scanning elements will make it possible to transmit wide format films without losses. A significant social and economic impact can be anticipated from the organization of centralized feed of motion picture films via TV with distribution through a cable network to movie theaters.

Considerable attention should be devoted to the development of systems which provide for an increase in the information content of TV broadcasting, i.e. the design of systems for the transmission of additional information incorporated in the TV signal, for example, text with the incorporation of special memories and character generators in TV receivers. A number of such systems have already been realized abroad ("Teletext", "Antiop", etc.). The problem of introducing such a system in our country can be resolved in the upcoming decade.

It is necessary to increase the convenience in the control of TV receivers by designing and introducing additional service devices: wireless remote control, IR headphones, program control to turn a television set on and off, display of the channel number on the television screen, as well as the current time and the display on a portion of the screen of another channel when desired by TV viewers.

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BRIEFS

SCANDINAVIAN MOBILE PHONE SYSTEM--In cooperation with mobile phone producers, the telecommunications boards of the Nordic countries have developed a wireless, fully automated phone system which enables mobile telephone subscribers all over Scandinavia to contact 500 million telephone subscribers in about 50 countries. The system will be introduced in Sweden in the course of the summer months, and Denmark will be connected to the system at the turn of the year. With the Nordic Mobile Telephone System, it will not be necessary to call the trunk exchange. There will be no waiting time, and calls will be completely private. A. P. Radiotelephone, Inc., has developed a mobile phone for the new system, AP-Nordic Mobile Telephone. Despite its small size, it has all the advantages of the new system. For example, it has a 16-figure display, showing the entire number called to ensure the caller that he has not called the wrong number. It, moreover, will show the last number called. If the number is busy, one need merely push the repeat button, and it will then call again automatically by itself. The mobile telephone will, moreover, store up to 60 different short numbers and may be switched automatically to another number, for example the telephone number of the company or the home telephone number when the subscriber leaves his car. The phone consists of a receiver, containing keyset and display, as well as of a radio unit. Because of the use of microelectronics, the radio unit containing duplex filters, is small enough to be stored without difficulty under the seat or in a corner of the luggage compartment. [Text] [Copenhagen LAND OG FOLK in Danish 4 Jun 81 p 11] 7262

CSO: 5500/2231

FIRM CHIEF TELLS OF TESTS WITH USSR SATELLITE TV

Satellite TV Ready Soon

Helsinki UUSI SUOMI in Finnish 2 Jun 81 pp 16-17

[Article by Ritva Kankare]

[Text] Finland is moving into the satellite age. Even now Finns are watching clear, color-television images transmitted via satellite and television manufacturers are working on research and product development.

Satellite telecasts will be a full reality in our ordinary television viewers' living rooms in a couple of years. At least Salora general manager Henrik Ohquist promises that we will eventually have a complete satellite package for individual use and manufacturers of common antennas are also in the full swing of product development.

Ohquist feels that talk of politics interfering with the Nordic countries' Nordsat Project is naive. After all, people must have freedom of choice.

"Satellite telecasts are coming and they will be watched anyway, regardless of the decisions made by the Nordic countries. There must be the same freedom in watching television programs as there is in choosing one's newspaper. Use of the media must not be denied."

Ohquist says that in time Salora will probably begin to get ready for the satellite age. The highly specialized firm's activities are based on solid technique, swift reaction and flexibility.

"Right now, stereo television is of current interest. In the same way, when a satellite receiver is in demand, we will have one ready to offer."

Ohquist admits that the competition is tough, downright fierce, and is getting tighter all the time.

"All the Europeans are competing among themselves. So far the Japanese have not pressed their attack to any great extent.

"It doesn't pay to make mass-produced products. New products are being designed all the time. More and more is being invested in product development. Telset and Text-TV are of current interest, the former primarily to businesses and the latter for home use as well."

According to Ohquist, satellite telecasts also increase interest in cable-television operations.

Satellite Adaptor

Telecasts transmitted via the Soviet "Horizont" satellite can be viewed in Salora's research laboratory. The announcer with the dark curls can be seen on the color screen as clearly as Leena Housek can.

Research engineer Erkka Sointula told us that the research and product development program aimed at the development of equipment suitable for the reception of direct satellite telecasts was begun as early as a couple of years ago.

At first Salora used equipment made by the State Technical Research Center intended for use under laboratory conditions when it was monitoring telecasts from the French OTS-2 experimental satellite. Early this year the first satellite adaptor of its kind in Finland was produced by Salora's research division, a special device which converts signals transmitted by a television satellite into normal television images.

The OTS-2 satellite is located at an altitude of about 36,000 km above the equator. The Soviet "Horizont" is also at a similar altitude above the equator in a so-called geostationary orbit.

"This means that the satellite's period of rotation is the same as earth's, 24 hours; in other words, 'Horizont' remains stationary as viewed from earth," Sointula explained.

"'Horizont' is a part of the Soviet program-transmission satellite system. It serves as a good subject for Finnish research because it transmits programs from morning to evening."

The French OTS concentrated primarily on evening programs.

In addition to the special adaptor, the Salora research division has also developed a microwave component needed in the antenna.

Package Ready by 1983

"There have been two or three people constantly doing research and the work is still going on. The next step is to develop an adaptor for regular production and a high enough level of automation.

"We are now so far advanced that the equipment will be ready by 1983. We are above all developing receiver equipment for direct satellite transmissions for the European market, since most of our production goes into exports, but naturally there is a demand for our products in the Nordic countries too.

"We will soon be bringing out two or three satellite programs not designed for Nordsat," Sointula says and believes that Nordsat will also be realized.

"The Nordic countries cannot afford to remain outside of development. Hesitation could really result in others' gaining the upper hand.

"A big investment in product development, however, will mean that the Finns want to occupy first place and offer alternatives that are as good as their competitors'."

As concerns Salora, this means packages for individual reception.

"In the field of common reception of satellite transmissions, our role has to do with regular television. The others can take care of 'the attic,'" Sointula says.

Satellite Television

On Salora's roof there is a 4.5-meter dish antenna for the reception of satellite transmissions which is aimed with the same degree of accuracy as satellite parts are.

The French program could be viewed surprisingly well, even though the telecast was beamed at Tunisia. We can see Soviet programs just as well now, even though they are not quite aimed at Salo now either.

A special antenna is required for the reception of satellite transmissions.

In a common antenna reception setup, for example, in an apartment building, conversion of the transmission signal into an image occurs "in the attic" and no additional devices are needed in the receiver itself, the television set. In that event, even an old, familiar black-and-white set will do.

On the other hand, in the case of individual reception — for example, in a single-family dwelling — both a special antenna and a special adaptor attached to the set are needed. The latter is precisely the same interesting-looking little 10 x 12 x 2.5-cm box which has now been developed at Salora and which will be located inside future mass-produced sets.

Will Cost 2,000 Marks

"The desire on the part of the consumer to watch satellite telecasts will produce a bill of a couple of thousand marks. Of course, at this point it's impossible to say exactly how much they will cost," Sointula said.

In a couple of years the satellite age will revolutionize television viewing altogether. We may, however, have to wait a while for the much-touted wall-to-wall television screen. So far the cost is too high.

Cable Companies Ready and Waiting

Helsinki UUSI SUOMI in Finnish 2 Jun 81 pp 16-17

[Text] Companies that engage in cable-television activities are impatiently waiting for satellite telecasts to begin.

some 20 firms that have sprung up over the past few years were in fact founded with this in mind — many of them do not yet even telecast programs.

Helsinki Television Network (HTV) chief Lennart Wasstrom says that the company is technically ready to transmit satellite telecasts with a good half a year's time to prepare for them.

At present under the egis of the European Radio Broadcasting Union they are waiting for a decision on the contents of the French experimental OTS satellite program. A decision may be reached within a month.

The HTV distribution network has been built for 12 television channels. Telecasts would be begun with even the one satellite.

The fact that each of the satellites requires its own receiving antenna creates a reception problem. Two color systems are in use in Europe. Among others, those that are in use in France and Eastern Europe are different from the Finnish system.

"The investment costs for one antenna come to from 200,000 to 800,000 marks, depending on how the satellites themselves are aimed," Wasstrom estimated.

Timo Laatunen, general manager of Tampereen Kirjapaino Oy [Tampere Press], the chief stockholder of Tampere-based Tampereen Tietoverkko [Tampere Information Network], says that his firm is right now calculating reception costs.

"Naturally, during the initial period the number of households belonging to the network will not be sufficient to cover costs, but that point will be reached once the operation has established itself," Laatunen believes.

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CSO: 5500/2227

FINLAND

TEXT-TV TO BEGIN OPERATING IN FALL

Helsinki KANSAN UUTISET in Finnish 3 Jun 81 p 5

[Text] YLE [Finnish Broadcasting Corporation] will be moving into a new dimension in the fall. As of October viewers with color television sets equipped with supplementary devices will be able to watch the news, weather reports, sports results, etc. in the form of graphic images or text simply by pushing a remote control button.

Text-TV is a new communications system that offers an auxiliary device to those who want printed matter in addition to conventional television programs, which operate largely on the basis of sound.

YLE's Text-TV telecasts are to begin this October in connection with the radio industry fair. The industry will simultaneously put the sets required to receive the telecasts on the market.

To watch Text-TV programs, viewers will have to acquire receivers equipped with the new supplementary device. The price of this kind of receiver will come to about 1,000 marks more than that of an ordinary color-television set. By means of a remote control button viewers can receive Text-TV programs between test picture and prime program time from 0900 to the final telecast of the day. Watching these programs will not raise the cost of the license fee.

As of this fall, Text-TV will telecast news, weather reports, sports results, foreign exchange rates and the next day's radio and television programs. Right from the start of these telecasts, YLE will take into consideration the special requirements of the deaf and hearing-impaired in connection with Text-TV telecasts.

In the fall of next year YLE will begin to produce its own programs by means of a new technique for transmitting printed matter. Even before then YLE intends to begin to produce pages of text in our second national language.

Text-TV will be of particular significance to the deaf and hearing-impaired who, as of this fall, will for the first time be able to enjoy the news at the same time of day as others do. Furthermore, it will be easier for them to follow television programs thanks to the transmission of text. In future, they also intend to visually present other sound effects than just speech.

The development of Text-TV got its start at the beginning of the past decade in England, where it has been in constant operation since 1976. In addition, Sweden, among others, has begun its own Text-TV telecasts.

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BRIEFS

CABLE FIRMS AND SATELLITE TV—There are television satellites that interest the Finns other than the Nordic countries' joint Nordsat Project, which has become entangled in the web of politics. The scheduled 1985-1986 deadline for Nordsat can scarcely be met, even though the technical potential for carrying it out is good. The OTS-2, the European experimental satellite sent into orbit in 1978, is well regarded in Finland. In addition to Western Europe, the Middle East, North Africa, the Azores, the Canary islands, Madeira and Iceland can be covered by its six transmitting antennas. At least an approximately 5-meter dish antenna is needed to receive programs transmitted by the OTS-2. Tele-x is a Swedish experimental communications satellite whose transmissions are scheduled to begin in 1986. Germany's D television satellite should begin test transmissions in 1985 or 1984. The viewing range covers the Nordic countries with the exception of Iceland. In Finland a 2 or 5-meter antenna is sufficient, in Southern Finland a 1,5-meter antenna. The French satellite is scheduled for operations at about the same time as the German one, but the reception will be poorer in Finland. "In addition, there is talk of Luxembourg's participating in satellite operations, among others. [Text] [Helsinki UUSI SUOMI in Finnish 2 Jun 81 pp 16-17] 11466

CSO: 5500/2227

TELECOMMUNICATIONS MINISTER ON PROPOSED LAW FOR PRIVATE TV

Rome L'ESPRESSO in Italian 10 May 81 pp 209-211

[Interview with Posts and Telecommunications Minister Michele Di Giesi on future of private TV stations, in Rome, by Tullio Fazzolari; date not given]

> [Text] According to the minister, the new regulation will cut the number of private stations in half. But many other things will have to change. Even in the advertising segments. As for the large groups, no danger of trusts because...

Rome--"What is this talk of slaughter of TV stations! The law regulating private TV stations will serve to put some order in the jungle we now have, not stifle it. There are now 600 private TV stations in Italy. That is too many. With the new law, only 300 will survive. In my opinion, that is not a massacre. And these 300 stations will be able to work more effectively." Michele Di Giesi, minister of posts and telecommunications, has no doubt: the law proposed by his ministry, regulating private TV stations, will not produce earthquakes. "On the contrary," he maintains, "it will restore balance in the television medium. The important thing is for the law to be made effective immediately."

[Question] But as early as 1976, when the Constitutional Court put an end to the monopoly of the RAI [Italian Broadcasting Company], there was talk of the need to regulate private stations. What is still missing?

[Answer] The text of the law is already prepared in its essential aspects. But there are some policy problems which cannot be resolved by the minister of posts or the experts. The government and majority must decide.

[Question] What are those problems?

[Answer] To decide which measures to adopt to prevent the recurrence of monoplies and combines, to decide whether network hookups will be permitted and to what extent and the like.

[Question] Well then, when shall we see private television regulated?

[Answer] It will be at least 2 years. After the Council of Ministers and Parliament ratify the law, it will take time to make it operative. It will be necessary to appoint committees and define the areas within which each private TV station will be permitted to telecast. And all this will require approximately one more year of work.

[Question] Meanwhile, which of the private TV stations will continue to be a jungle? What will then change? And how will the law function?

[Answer] First, there will be a national committee composed of 19 members chosen by the government, the Parliament and the regions and presided over by the minister. The committee will be responsible for planning assigned frequencies, granting licenses and seeing that the law is respected.

[Question] Let us consider things in their proper order. Instead of 600 priv te TV stations, there will be only 300. Why?

[Answer] Simply because it is better to have 300 strong ones, economically self-sustaining without being conditioned by large groups. And 300 is only an approximate figure. Private stations should live from advertising. We shall need to evaluate precisely how much should be handled by TV and how much should go to the advertising market.

[Question] And how do you think it possible to make this evaluation?

[Answer] We shall have to establish parameters. With the help of the regions, it will be necessary to make an economic analysis of income area by area and ascertain which areas have the denser population. And, at this point, define the areas. That is to say, the boundaries within which private TV stations will be permitted to transmit and take on advertising.

[Question] And how many stations will be permitted in each area?

[Answer] I should say that there should be at least four to assure a minimum of pluralism.

[Question] However, in the Rome area there are already about 60.

[Answer] And that is too many. I realized that a few days ago. I was confined to a hospital bed and was able to watch TV for hours. But often the channels got entangled. In short, too many TV stations do not provide good service for the viewers. In order for the reception to be clear, a license should be granted for every four frequencies: between channels 30 and 34 there should be no other transmitters. But, above all, we must be sure that private TV stations in a given area have enough advertising to survive.

[Question] It has been said that every private TV station will have an average annual requirement of 15 to 20 billion lire. Multiplied by 300 stations, this gives between 4.5 and 6 trillion lire: an enormous figure.

[Answer] But these are all figures just grabbed out of the air! What a TV station in Milan needs is far different from what is needed by a station in Catanzaro. Costs also change from area to area.

[Question] In any case, according to your forecasts, the number of private stations will be cut in half. How? On the basis of what criterion?

[Answer] In the case of each general area, private stations will present their requests for licenses to telecast. If the number of requests is equal to or less than that of the available frequencies, the committee will confine its efforts to a series of verifications. It will have to make sure that the station has the necessary technical qualifications; and that it is able to sustain itself without resorting to risky and hidden sponsors.

[Question] What if there are many requests?

[Answer] A competitive appraisal will be made to see which has the greatest technical and financial assets. For example, preference will be given to a station which rather than transmitting only 6 hours per day (the minimum required by law), will transmit more.

[Question] What you are saying is that preference will be given to the station which has the most funds and can produce and transmit more.

[Answer] This is not necessarily true. Private TV stations will be able to band together and jointly produce many programs by amortizing the costs.

[Question] From consortiums to chains of transmitters to national networks the transition can be rapid. For example, Berlusconi is already spreading throughout Italy.

[Answer] The law provides for antitrust legislation. One physical or juridical individual may have only one license. If it is discovered that, through figureheads or other manipulations, he has two or more, he is given warning or his license is suspended or revoked. And, in certain cases, action may go so far as to seize the installation. But there is nothing wrong if several stations band together and, using the same identification, jointly produce programs. In any case, at least 30 percent of their hours of transmission should be covered by their own production.

[Question] And who can guarantee that, producing as a consortium, several stations might not end up becoming an outright national network?

[Answer] The guarantee already exists; only the public service is allowed to use hookups; that is, only the RAI is allowed to make a nationwide telecast. Private stations--whether Berlusconi, Rizzoli or others--will be permitted to transmit programs only within their localized area, or, at the most, in two adjoining areas.

[Question] Then, simultaneous transmissions will not be possible?

[Answer] Yes, but not with station hookup and much less via satellite. The same program may be broadcast to Palermo and Venice thanks to videocassettes played at the same time.

[Question] And RAI? The agreement terminates in August. What change is to be made in view of the regulations pertaining to private stations?

[Answer] In certain aspects RAI's procedures will have to be followed. For example, even private stations should not broadcast advertising shorts in the middle of a film or show. This is a question of principle in favor of the viewers. But the new agreement with RAI will have to take the existence of private stations into account. The third network will not be able to expand still further if it does not want to crush the private stations. But it will not be difficult to strike a balance. What is important is to act fast. If the present situation is prolonged, the strongest will win: the large groups, Berlusconi and Rizzoli foremost, will end up colonizing the small groups, selling them not only programs but even the advertising necessary to survive.

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